

THE UGLY TRUTH ABOUT BEAUTY AND HYGIENE PRODUCTS

While awareness grows about eating organic foods to reduce exposure to toxins, it has some way to go when it comes to cosmetic, personal care and hygiene products whose chemical and often carcinogenic ingredients don't even have to be listed on the labels.

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A deadly cocktail of chemicals

No ordinary soap will do. We cleanse ourselves with a face and body scrub and pat our skin dry. Then we anoint it with revitalising crèmes. A few sprays of deodorant to mask body odour (our natural sweaty odour that follows a hard day's work, it must be said) come next. Perhaps we then apply a dab of perfume or after-shave lotion. For about half of our adult and teenage population—yes, I'm referring to women—an entire regimen of "doing up" one's face follows: sunscreen lotion, foundation, highlights, lipstick, nail polish. The list goes on and on, for we are ignorant consumers of personal care products and cosmetics.

Our ignorance starts where we fail to realise that the recipient of our vanity is our body's largest single organ: our skin. Indeed, our skin is far more than merely a cover for what lies beneath. It is a living sheath that breathes, at least as far as we allow it to. Consequently, when we slather it with crèmes and lotions, its innate ability to breathe, and thus to live, diminishes. The damage is not restricted to our skin feeling smothered. An easily absorbing organ, skin actually sucks in compounds that we apply on its surface. If these compounds contain beneficial ingredients, there will be no ensuing harm. But if these products contain chemicals that are likely to have adverse effects on our skin and other organs of our body, especially a dangerous cumulative effect that results after years of use, our simple hygiene habits translate to a killer lifestyle bringing us closer to disease and death.

So what do commonly used personal care products and cosmetics contain? It may come as a surprise, but these are often a cocktail of chemicals that act as carcinogens (cancer-causing agents), derma irritants (skin irritants), developmental toxins (toxins that especially affect the physical and mental growth of children), endocrine disrupters (substances that stop the production or block the transmission of hormones in the body and thus interfere with development), mutagens (agents that cause DNA mutations leading to either cancers or birth defects), neurotoxins (chemicals that affect our nervous system), reproductive toxins (agents that affect our reproductive system) and sensitisers (chemicals that cause allergic reactions in normal tissue after repeat exposure). Whew!

Find this hard to believe? Before we take a closer look at what the above actually implies for your health, let's consider why these facts are so well suppressed.

The number of consumers of beauty and hygiene products is ever-rising—and no wonder, for vanity is no longer women's sole prerogative. Men, too, have been effectively wooed by cosmetic giants who preach a "look good, feel good" mantra. Across developed nations of the West and rapidly developing, opening markets of countries in the East, ignorance and a false belief that equates development with looking good or glamorous, have a consumer-oriented population tightly in its grip. The result is a rise and rise in the profits of global cosmetic and personal care product corporations. Their success fuels still more aggressive advertising campaigns, influencing many more to fall prey to the need to "look good".

Why is this happening?

As opposed to asking why this is happening, the question should be why we are *allowing* this to happen. The fact that beauty and hygiene products are still not perceived as directly linked to our well-being (read health) contributes to the problem. We are, albeit slowly, becoming enthusiastic about organic foods and simultaneously cautious about chemical and pesticide remnants in the fruits and veggies we consume, as we know

that we ingest these, but we still view cosmetics and their like as products that we only use externally. Our conscious mind has not absorbed the fact our skin is a living sponge, as prone to the harmful effects of toxins as, say, our digestive system.

It is our lack of awareness and agitation that is spurring the rise of the cosmetics industry. As a result, while activists are effectively continuing their campaign against the tobacco industry, consider that it's been years since cigarette packets were made to carry a warning "Cigarette smoking is injurious to health", but no similar injunction to carry a statutory warning has been made for cosmetic and personal care products.

Loose standards

Thus, as opposed to the stringent standards that should be developed for cosmetics, the reality is quite the contrary, meaning that the cosmetics industry gets away with a lot. For instance, in the USA, the Food and Drug Administration (FDA) does not require safety testing, either by the manufacturer or by its own staff, of the final beauty product before it hits the market. Thus, both the final product and its ingredients remain suspect. In the agency's own words, "a cosmetic manufacturer may use almost any raw material as a cosmetic ingredient and market the product without an approval from FDA".¹

So while cosmetic companies would have you believe that they care very much for your skin and conduct rigorous sensitivity and safety trials (on animals, but that brutality makes for another story) prior to launching a product, in truth, as researchers from the National Research Council point out, "of the tens of thousands of commercially important chemicals, only a few have been subjected to extensive toxicity testing, and most have scarcely been tested at all".²

The US National Environmental Trust, an industry watchdog, paints a dismal picture as the outcome from the absence of standards and testing. "Because the FDA does no pre-market health testing of chemical ingredients in cosmetics, for industry to claim considerable safe use over many years is to wholly neglect the fact that we have no publicly verifiable way of knowing such a claim is true," says Nick Guroff, the group's California organiser.³

A powerful lobby

However, you may choose to believe the words of the cosmetics industry that has billions of dollars in profits at stake. A huge conglomerate, the industry willy-nilly manages to get its way in countries where ignorance flourishes. In the European Union, toxic cosmetic ingredients were banned thanks to a new bill enacted in 2003 and implemented in September 2004. However, in the USA, the US\$35 billion cosmetics industry is amply applying its resources—which it must be said it does not lack—to fight a similar ban tooth and nail.

California Assemblymember Judy Chu (D-Monterey Park) worked to introduce a bill that would ban the same two types of phthalates as were banned by the EU, and subsequently possibly other chemicals blacklisted by the International Agency for Research on Cancer (IARC) and the US Environmental Protection Agency (EPA). Phthalates are chemicals used in some nail polishes and hair care products and have been proved to cause birth defects and reproductive problems in animals. Judy Chu's Phthalates Ban Bill (AB 908) would have been the first-ever phthalates ban in the United States, but in January 2006 the bill was declared to have "died".⁴

Aside from banning two phthalates, Chu would also have cosmetics manufacturers adhere to a new rule requiring all products to include a list of their ingredients, especially hazardous chemicals. As things currently stand, product labelling is both inadequate and often confusing, such that a layperson is never quite certain what to make of the ingredients listed. In 2004, Chu sought to empower the consumer to make more informed choices about the cosmetics they use via her AB 2012 or Consumer and Personal Care Consumer Product Hazards Bill, which would require disclosure to the State Office of Environmental Health Hazards Assessment of all chemicals in cosmetic products that cause cancer or reproductive harm.⁵ However, this bill has also "died".⁶

The cosmetics industry lobby has successfully managed to sway opinion its way by trotting out the excuse that listing their products' ingredients could either infringe on or endanger their trade secrets. So, for now, phthalates are here to stay, unlabelled.

It is pertinent to mention that safety groups quoting the ill-effects of chemicals do not rely on hearsay. As an example, significant research into the health impacts of phthalates has been conducted, such as a study by Dr Shanna Swan, professor of obstetrics and gynaecology at the University of Rochester, linking the chemical to feminisation in boys. A government-funded study, it showed a distinct correlation between prenatal phthalate exposure and a shortened anogenital distance (AGD) in male babies, a finding which in turn implies that these baby boys are more likely to have incomplete testicular descent and smaller penises. Interestingly, these changes occurred at phthalate levels that have been measured in about one quarter of women in the United States.⁷

How bad is bad?

Shocking news indeed, but what is most important for a consumer to realise is that incidents we hear of are just the tip of the iceberg, so to speak.



Phthalates are just one of the many, many chemicals finding their way into personal care products that we innocently use on a daily basis. The Environmental Working Group, a watchdog organisation, estimates that only 11 per cent of the approximately 10,500 ingredients documented as common ingredients in personal care products have been sufficiently tested for safety.⁸

In this scenario, ignorance is not bliss. Quite the contrary: it can spell doom and have a severe impact on our health and that of our loved ones. Picture a mother bathing her child in a bubble bath. Children love to splash around amid bubbles in a bathtub, so a bubble bath is an ideal way to encourage a bathing habit. But how many mothers are aware of the fact that a bubble bath solution contains DEA, TEA and MEA or, to put it in technical terms, diethanolamine, triethanolamine and monoethanolamine. These three chemicals when combined with nitrites—a reaction that can innocuously occur while a product is stored for sale on a store rack—produce nitrosamines such as NDEA (*N*-nitrosodiethanolamine), which is highly carcinogenic, is especially a threat to the kidneys and liver and is easily absorbed by the skin—and more so, possibly, by the tender skin of children.

They are also known to cause allergic reactions, irritate the eyes and dry out the hair. Many shampoos, body washes and soaps contain this deadly mix of chemicals. As far back as 1980, the FDA reported that about 42 per cent of all cosmetics are contaminated with NDEA, shampoos having the highest concentrations.⁹

However, manufacturers insist that DEA and its derivatives are "safe" to use in products meant for brief use or on a "use and wash off" basis. A study published in the *Journal of the National Cancer Institute*, though, suggests otherwise, indicating that both human and animal studies have shown that NDEA can be quickly absorbed through the skin.¹⁰

Interestingly, in 1978, the IARC indicated that "[a]lthough no epidemiological data were available, *N*-nitrosodiethanolamine should be regarded, for practical purposes, as if it were carcinogenic to humans".¹¹ This postulate was reconfirmed nearly 10 years later.¹²

The FDA expressed its concern about the contamination of cosmetics with nitrosamines in a notice published in the *Federal Register* of April 10, 1979 (44 *FR* 21365). It stated that cosmetics containing nitrosamines may be considered adulterated and subject to enforcement action. In surveys of cosmetic products conducted in 1991–92, nitrosodiethanolamine was found in 65% of the samples at levels up to 3 ppm.¹³

In 1994, the American National Toxicology Program presented a similar conclusion in its "Seventh Annual Report on Carcinogens": "There is sufficient evidence for the carcinogenicity of *N*-nitrosodiethanolamine in experimental animals." The report further noted that of more than 44 different species in which NDEA compounds have been tested, all have been susceptible.^{14,15}

In its Eleventh Report in 2005, the NTP noted that "*N*-nitrosodiethanolamine is *reasonably anticipated to be a human carcinogen*..."¹⁶

Beware of...

The above constitutes just one example, of DEA, TEA and MEA combining with nitrites to form NDEA. In truth, we are flooded by a veritable sea of chemicals, each having its own potency and ability to inflict damage on the human system. The best a person can do in such a scenario is to know which chemical causes what and then steer clear, as far as practicable, of such products.

Now, let's take a brief look at some more ingredients that penetrate our skin with potentially disastrous consequences:¹⁷

Formaldehyde: Imidazolidinyl urea and DMDM hydantoin are formaldehyde-forming preservatives used in skin, body and hair products. These are known to cause allergies, asthma, chest pain, chronic fatigue, depression, dizziness, headaches and joint pain. Formaldehyde, also a preservative and disinfectant, is used in shampoos, nail polish, nail hardeners and hair growth products and is regarded by the IARC as a carcinogen and by the US EPA as a "probable" carcinogen. Its presence is often masked, as it forms part of other more voluminous ingredients. You'd need to look out for ingredients like hydantoins and surfactants such as sodium lauryl sulphate, which may contain formaldehyde, to know if a product contains the substance or not. It would also help to know that the product also goes by the names formalin or MDM.

Coal tar, used as a base for hair dyes and in anti-dandruff shampoos, is known to cause life-threatening diseases such as cancer as well as an entire range of common health ailments such as asthma and headaches. Watch out for FD&C or D&C numbers on the product label. Some slow-working hair dyes contain lead, a well-known carcinogen and hormone disruptor that is fairly easily absorbed by the skin and which accumulates in the bones. Xavier University of Louisiana has researched the subject and found that some brands of

hair dyes contain up to 10 times the amount of lead allowed in house paint! Anyone who has used house paint or occupied a freshly painted room knows what health reactions it can trigger: headaches, sneezing and nausea, to name a few. Painters, and to a lesser extent those involved in paint manufacturing, are well known to have a higher risk of developing cancer because of their exposure to lead. In fact, studies are now linking a higher incidence of childhood cancer among children whose parents (father or mother) are exposed to paint.^{18,19} Of course, it must also be emphasised that paint contains many other deadly chemicals and a painter's exposure is to the entire gamut, not necessarily only lead in the form of particles containing lead chromate.

Petrolatum, a semi-solid hydrocarbon mix that's also known as mineral oil jelly, petroleum jelly, Vaseline, paraffinum or liquidum, has the ability to prevent the body from carrying out its natural processes of eliminating toxins. It can also cause photosensitivity and can strip the skin of its natural oils, the outcome being chapping and dryness, premature ageing, acne and other skin disorders.

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Talc, a better-known ingredient (think talcum powder) found in face and body powders as well as lightly dusted on contraceptive devices such as condoms, is a known carcinogen. Studies have associated it with being a cause of ovarian cancer when used in the genital area, primarily because talc, a magnesium silicate inorganic compound, may act as an irritant to the cells covering the ovaries.²⁰ Also, in earlier years more so than now, cosmetic talc was often contaminated with asbestos-like trace material, an inorganic agent known to produce tumours. How? Basically, talc is a mineral produced by the mining of talc rocks which are then processed by crushing, drying and milling to eliminate a number of trace minerals.

However, this process does not separate minute fibres which are very similar to asbestos. Hence, talc is closely related to the potent carcinogen asbestos.

Scientists have closely scrutinised talc particles and found dangerous similarities to asbestos. So much so that in 1973, the FDA drafted a resolution that would limit the amount of asbestos-like fibres in cosmetic-grade talc. However, no ruling has ever been made and, today, cosmetic-grade talc remains non-regulated by the Federal government. This inaction ignores a 1993 National Toxicology Program report which found that cosmetic-grade talc, without any asbestos-like fibres, caused tumours in animal subjects. Apparently, irrespective of the presence of asbestos-like fibres, cosmetic-grade talcum powder is a carcinogen.²¹ Incidentally, talc can also settle itself in our lungs, causing respiratory disorders and possibly lung cancer.

Sodium lauryl sulphate (SLS) is very commonly used in the manufacture of shampoos, hair conditioners, toothpastes and virtually every personal cleansing solution. SLS is a strong, harsh detergent, also commonly used as an engine degreaser! Imagine, then, what it could do to your body. It can cause eye irritation, even permanent damage to the eyes especially in children, skin rashes, hair loss, flaking skin and mouth ulceration. When combined with other ingredients, SLS can also form carcinogenic nitrosamines. It easily penetrates the skin and can settle in the heart, lungs, liver and/or brain.

Padimate-O, also known as **octyl dimethyl** and **PABA**, is a common ingredient of sunscreens. Like DEA, it is a nitrosamine-forming agent. There is increasing concern that the energy absorbed by this sunscreen is then turned into free radicals, which may then actually increase the risk of skin cancer. An ironic situation indeed, to use or not to use!

Alcohol or **isopropyl** is a poisonous solvent and denaturant, meaning that it can modify the structure of other chemicals. Used in hair colour rinses, body rubs, hand lotions, after-shave lotions and fragrances, it may cause nausea, vomiting, headaches, flushing and depression. It also dries out the hair and creates cracks in the skin surface which may encourage bacterial growth.

Fragrances used in perfumes and many other personal care products are usually petroleum based. These may cause headaches, dizziness, rashes, respiratory problems, vomiting, skin irritation and multiple chemical sensitivity. Sadly, the FDA still does not require perfume manufacturers to warn consumers about the toxic chemicals found in their products.

The fact that cosmetics are manufactured to have a long shelf-life, unlike edibles, contributes to their toxicity and potential to work as carcinogens. Nitrites continue to be formed in these chemical-based compounds (calling them cosmetics after knowing what they truly are is somewhat naive), thanks to the presence of other chemicals such as formaldehyde, paraformaldehyde, thiocyanate, nitrophenols and certain metal salts.²²

Studies based on humans and animals indicate that the body rapidly absorbs the chemicals in permanent or semi-permanent dye through the skin, during the time in which the dye remains on the scalp.

More proof? A case in point...

The above list is only indicative. It should by no means be considered a conclusive list of toxic chemicals found in cosmetics and personal care products. The idea is to be aware, to realise that our ignorance has allowed cosmetic and personal care product manufacturers to get away with practically anything.

In fact, to re-emphasise the gravity of the scenario, I present supportive scientific research for the link between the use of permanent or semi-permanent hair colours and cancer. Studies based on humans and animals indicate that the body rapidly absorbs the chemicals in permanent or semi-permanent dye through the skin, during the time in which the dye remains on the scalp. Daubing dye on your scalp can then do more harm than you would imagine.

In just 30 minutes of contact of the dye with your scalp (which, again, must be recognised as an extension of your skin), over years of usage you could apparently absorb enough carcinogenic substance to trigger cancer in your later years. As far back as the late 1970s, studies found links

between the use of hair dyes and breast cancers. A 1976 study reported that 87 of 100 breast cancer patients had been long-term dye users.²³

Subsequently, in 1979, a US-based study found a significant relationship between the frequency and duration of hair dye use and breast cancer, confirming what was earlier believed.²⁴ Those at greatest risk were 50- to 79-year-olds, suggesting that cancer caused by such exposure takes years to develop. So, women who started dyeing their hair when they were 20 had twice the risk of those who'd started at 40, simply because they had exposed themselves to more toxins.

Another study, published in 1980, found that women who dye their hair to change its colour, as opposed to merely masking greyness, were at a threefold risk, perhaps because of the colours used (more intense) and the time required for successive applications (longer duration means more contact between skin and dye/colour).²⁵

Subsequently, a jointly funded American Cancer Society and FDA study admitted a fourfold increase in relatively uncommon

cancers, including non-Hodgkin's lymphoma and multiple myeloma, in hair-dye users.²⁶

These studies also ratify the belief that darker shades of permanent and semi-permanent hair dyes, such as black, dark brown or red, intensify the cancer risk.²⁷

We just can't seem to get rid of them...

Evidently cosmetics, supposedly *beauty* products, are not really so beautiful in terms of our well-being. The toxins they package are a major health issue, and not only because of our direct exposure. You could choose to do away with your entire array of cosmetics and you would still be at risk of being contaminated by toxins, albeit at a significantly lower risk—assuming that you live in a relatively clean environment, which not all of us are fortunate to have access to.

The fact is that toxins in cosmetics and personal care products, after use, make their way into our environment. Soapy water, shampoo rinse and so on are all washed down the drain into sewer systems, thereby contaminating waterways and soil and poisoning plants and marine life. Once let loose in the environment, these chemicals make their way back to our homes by way of the food chain, and often their reappearance is in a heightened intensity. Given our increasing collective concern about toxins in food, it is somewhat ironic to find that our penchant for cosmetics may be aggravating our own problem.

Yet there is no reason to feel demoralised by our own heightened awareness. The need of the hour is to be aware and spread awareness until our global society turns to the perpetrators of these toxic products and demands answers and a permanent solution.

Where to from here?

Using the words "a permanent solution" may sound slightly facile in view of the veritable chemical cocktail that has been and continues to be tried and tested every day for future use on our delicate, living skin. The moot point is: Do we really have a realistic choice when it comes to alternatives? How good (or bad) are the so-called alternatives?

This calls for an extension to our newfound awareness.

Many cosmetic companies have read the writing on the wall, so to speak, and are apparently launching "natural" products. But not all of these are legitimate choices. Some, as they say, are old wine in a new bottle with a new label. There are no standards for what "natural" means. So the only way you can know what you're buying is to read the fine print on the product label.⁸²

It comes as no surprise that many so-called "natural" products also contain chemicals. The best you can do, then, is to compile a list of hazardous ingredients, likewise of safer alternatives, and circulate both to your friends and loved ones.

So where do you go from here? Certain public interest groups have launched websites, such as Skin Deep,²⁸ that function as an interactive personal care product safety guide. Skin Deep's searchable database, for instance, features brand-by-brand safety rankings and in-depth information on over 14,000 shampoos,

lotions, deodorants, sunscreens and other products from almost 1,000 brands. This service was designed by the Environmental Working Group, a Campaign for Safe Cosmetics partner, both for consumers and manufacturers, encouraging both to switch to genuinely safer alternative formulas.²⁹

The last word: naturalism

At the end of the day, you quite literally have to choose which night crème to apply to enhance your beauty. But pay heed, for, as your body seeks to rejuvenate overnight,

the mask on your face may perhaps be seeping below and firmly lodging itself in your body, only to cause future mayhem. Your beauty sleep may perhaps work its miracle more effectively without any added assistance.

The pretty face on beauty products often does not know or care for what she is endorsing. Advertising is a money racket, and the best you can do is to stay clear of its net. Carefully choose products that really use natural ingredients you recognise—or, better still, buy a good book containing do-it-yourself recipes, consider forming a group with your friends and enjoy making (and using) your own shampoos, crèmes, soaps, lotions, etc.³⁰

When it comes to your health and the well-being of your loved ones, there is no limit to how far you can go. Walking the extra mile will, in this case, undoubtedly take you that much further from disease and unhappiness.

The fact is that toxins in cosmetics and personal care products, after use, make their way into our environment.

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Continued on page 78

Continued from page 31

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